

ABSTRACT

Please add the following abstract:

A system is provided for detecting the presence of formation gas in a stream of drilling fluid flowing through a wellbore during drilling of the wellbore. The system has at least one sensor chamber connectable to a drill string for drilling the wellbore, each sensor chamber containing a volume of a selected gas and having a membrane wall which allows passage of formation gas from the stream of drilling fluid into the sensor chamber. The sensor is arranged to detect a change of a selected characteristic of the volume of gas due to passage of formation gas from the stream of drilling fluid via the membrane wall into the sensor chamber.